

JC20 Rec'd PCT/PTO 19 AUG 2005

Claims

1. A method for the anodic alkoxylation of an organic compound wherein a mixture containing the organic compound and a primary alcohol with 1-4 C atoms is alkoxylation in an unpartitioned electrolytic cell in the presence of a supporting electrolyte salt that is soluble in the mixture but in the absence of a solid polymer electrolyte at an effective cell voltage on an oxidation-resistant anode, characterized in that the anodic alkoxylation is carried out in the absence of a mediator, using a diamond film anode or a gold anode.

2. The method as in Claim 1, characterized in that an organic compound of the series of cyclic ethers, N-substituted amides, carbonyl compounds, in particular ketones, alkyl aromatic hydrocarbons and alkyl heteroaromatic hydrocarbons are anodically alkoxylation.

3. The method as in Claim 1 or 2, characterized in that a cyclic ether of the series of furans, dihydrofurans and tetrahydrofurans, 1,2-pyrans and 1,4-pyrans and the di- and tetrahydro compounds thereof, and 1,4-pyrones and the di- and tetrahydro compounds thereof is methoxylated or ethoxylated, preferably methoxylated, with at least one C atom bound to the ether oxygen atom in the hydrogenated furans, pyrans and pyrones having a hydrogen atom.

4. The method as in Claim 1 or 2, characterized in that an amide of the series of lactams with 5-7 ring members, of N-acylated saturated and unsaturated N-heterocyclic compounds and of open-chain N-alkyl or N,N-diallyl fatty acid amides is methoxylated or ethoxylated, preferably methoxylated, with a carbon atom bound to the nitrogen having at least one hydrogen atom.

5. The method as in Claim 1 or 2, characterized in that a ketone with a methyl group or methylene group bound to the carbonyl C atom is methoxylated or ethoxylated, preferably methoxylated.

6. The method as in any one of Claims 1-4, characterized in that the alkoxylation is carried out in the alcohol – that corresponds to the alkoxy group – as the solvent and that the supporting electrolyte salt used is a tetraalkyl ammonium salt, the anion of which is selected from the series of  $\text{ClO}_4^-$ ,  $\text{BF}_4^-$ ,  $\text{PF}_6^-$ ,  $\text{SbF}_6^-$ ,  $\text{R-SO}_3^-$  and  $\text{R-SO}_4^-$ , wherein R stands for alkyl which can also be halogenated and denotes in particular  $\text{CF}_3-$ ,  $\text{CCl}_3-$  or  $\text{CF}_3\text{CH}_2-$ .

7. The method as in any one of Claims 1-5, characterized in that the anodic alkoxylation is carried out at a voltage in a range from 1-50 V, in particular in a range from 5-25 V.

8. The method as in any one of Claims 1-6, characterized in that the supporting electrolyte salt is used in a quantity of 0.1-5 wt%, preferably 0.3-3 wt%, relative to the organic compound that is to be alkoxylation.